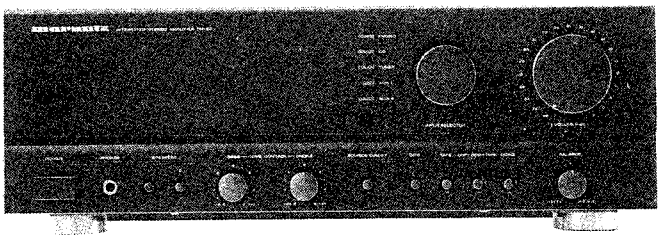
MARA-00545

Service Manual

74PM-62/00B/01B/02B/05B/07B/01G/02G

Integrated stereo amplifier



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marantz®

model PM-62

First issue : 1992

4822 725 50971 A.O

PCS 67 416

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.
Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

MARANTZ INTERNATIONAL
Vestdijk 9
5600 MD Eindhoven
The Netherlands
Phone: +31/40.758290
Telefax: +31/40.75.82.99
Telex: 35000 PHTC NL routing IND NLMTFAT

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified.
The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING

Parts may be ordered at the following addresses:

AUSTRIA
HORNYPHON
Vertriebsgesellschaft GmbH
Wienerbergstrasse 1
A 1101 Wien
Austria
Telex: 132.332

BELGIUM
SVD DIVISION MARANTZ
Industrialaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

CHILE
MARANTZ
DIVISION OF PHILIPS S.A.
AV. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

DENMARK
MARANTZ
DIVISION OF PHILIPS
SERVICE A/S
Prags Boulevard 80
Postbox 1919
DK-2300 København S
Denmark
Telex: 31201

FINLAND
MARANTZ
DIVISION OF OY PHILIPS Ab
Kaivokatu 8
00100 Helsinki
Finland
Telex: 124811

FRANCE
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

GERMANY
MARANTZ GERMANY GmbH
Alexanderstrasse 1
2000 Hamburg
Germany

THE NETHERLANDS
Elpro Marantz
Wint Hontlaan 28
3526 KV Utrecht
The Netherlands
Telex: 4748

NORWAY
MARANTZ
DIVISION OF PHILIPS A/S
Sandstuveien 40
0680 Oslo 6
Norway
Telex: 72640

GREAT BRITAIN
MARANTZ AUDIO U.K. Ltd
Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 OLW
Great Britain
Telex: 935196

GREECE
SHERTON ELECTRONICS S.A.
P.O.Box 21025
Hippocratus Street 188
Athens 11471
Greece
Telex: 216.795

JAPAN
MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT
AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O.Box 23781
Safat-Kuwait
Telex: 22694

ITALY
MARANTZ ITALIANA S.P.A.
Via Chiese, 74
20126 Milano
Italy

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 401530

SOUTH AFRICA
MARANTZ
DIVISION OF PHILIPS S.A.
Main Road Martindale
P.O. Box. 58088
Newville 21114
South Africa

SPAIN
PHONO S.A.
Ignacio Iglesias 10
Badalona (Barcelona)
Spain
Telex: 59355

SWEDEN
MARANTZ
DIVISION OF PHILIPS
Försäljning AB
Tegeluddsvägen 1
S-115 84 Stockholm
Sweden
Telex: 14060

SWITZERLAND
MARANTZ
Technischer Service
Duenstrasse 3
3186 Düdingen
Switzerland

TURKEY
DOGRUOL Ltd.
I.M.C.
6 Blok N°6310
Unkapani
Istanbul
Turkey
Telex: 22085

MALTA
CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

PORTUGAL
MARANTZ
Divisao philips S.A. service
Outurela-carnaxide
2795 LinDA-A-VELHA
Telex: 43906

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

TECHNICAL SPECIFICATIONS (DIN)

Power output

FTC 8Ω (20Hz–20 kHz) 70W
DIN 8Ω/4Ω 80/120W

IHF dynamic power

8Ω/4Ω /2Ω 95/160/240W
THD at 8Ω rated output 0.01%
Intermodulation distortion 0.01%
Damping factor 100

Magnetic cartridge input

Input sensitivity impedance . . . . . 2.5mV/47K Ω
Accuracy of frequency response to IEC RIAA 0.5dB
Signal to noise ratio (IHF A weighted) 86dB

Moving coil cartridge input

Input sensitivity impedance . . . . . 250 μ/100 Ω
Signal to noise ratio (IHF A weighted) 72dB

Tuner/CD/Aux/Tape inputs

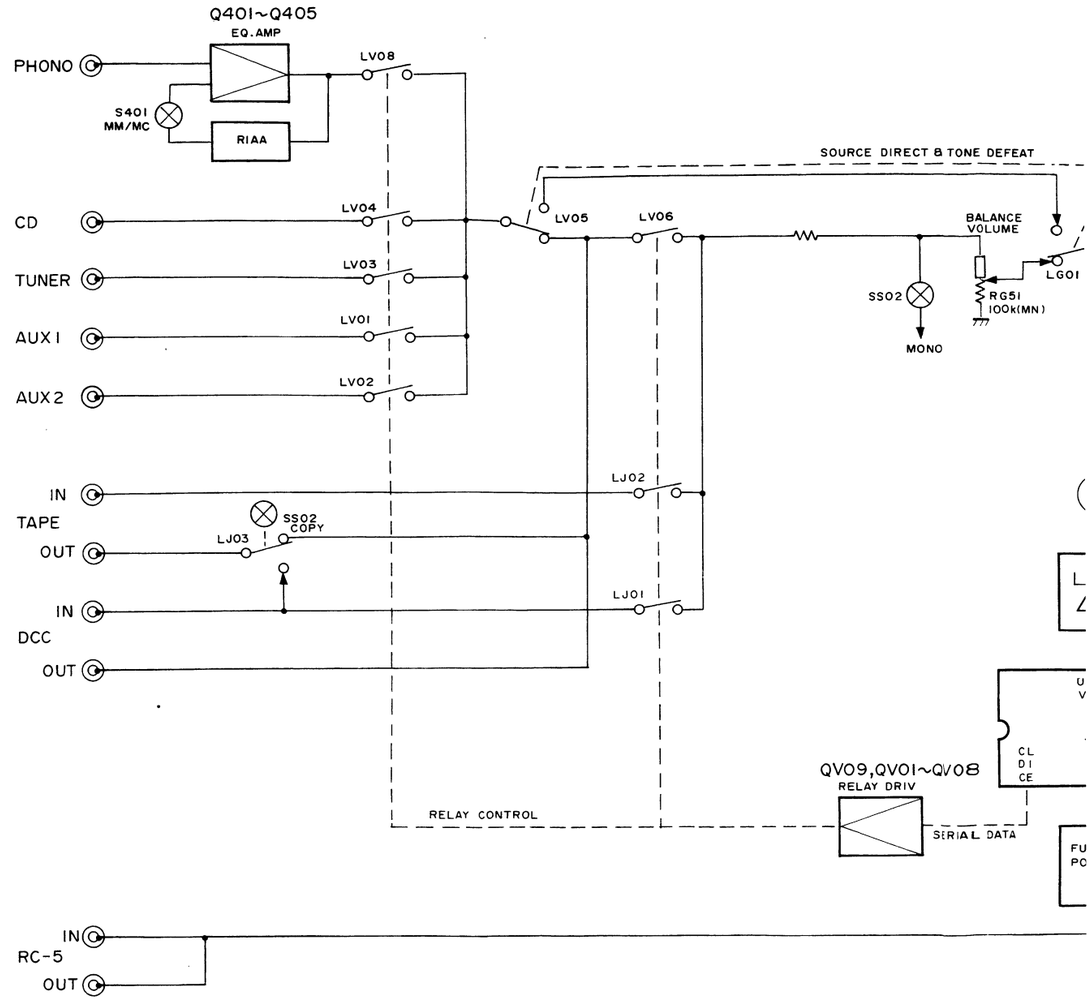
Input sensitivity impedance . . . . . 150mV/33K Ω
Signal to noise ratio (A weighted) 96dB
Frequency response (-3 db limits) 10Hz-70KHz
Tone characteristic (100Hz/10KHZ) . . . . . ±6dB
Channel separation (1kHz/10KHz) . . . . . >75/>65dB

General

Power Requirements
/00/02 and /05 versions . . . . . 230/240V AC, 50/60Hz
/01 version (4 voltages) . . . . . 110/120/220/240V AC, 50/60Hz
Dimensions
Panel Width 420mm
Panel Height 150mm
Depth 379mm
Weight
Unit alone 9.6kg

Specifications subject to change without prior notice.

1. BLOCK DIAGRAM



. . .70W
80/120W

160/240W
. .0.01%
. .0.01%
. . . 100

mV/47K Ω
. . 0.5dB
. . 86dB

0 μ/100 Ω
. . 72dB

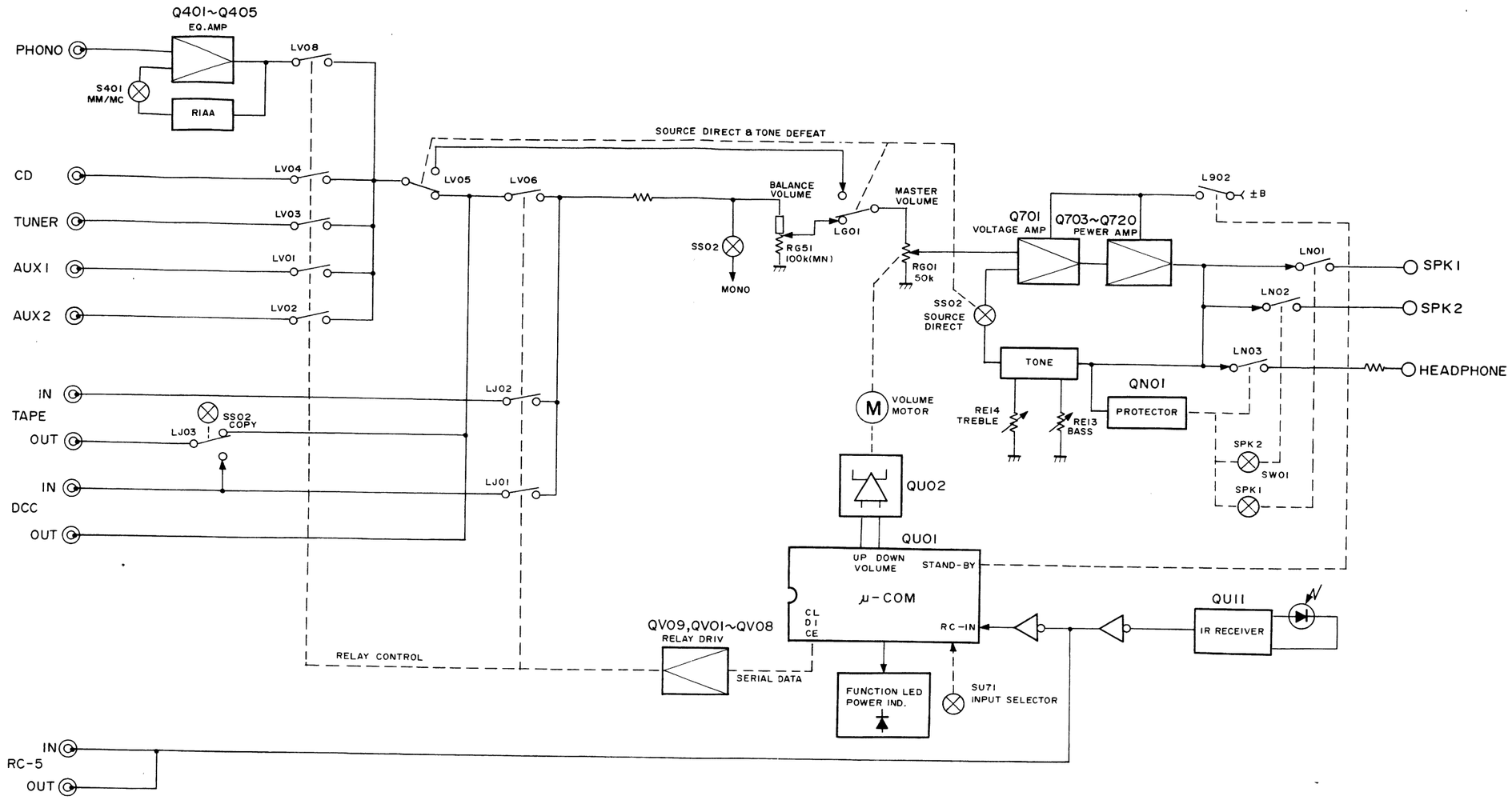
mV/33K Ω
. . 96dB
Hz-70KHz
. . ±6dB
75/>65dB

:, 50/60Hz
:, 50/60Hz

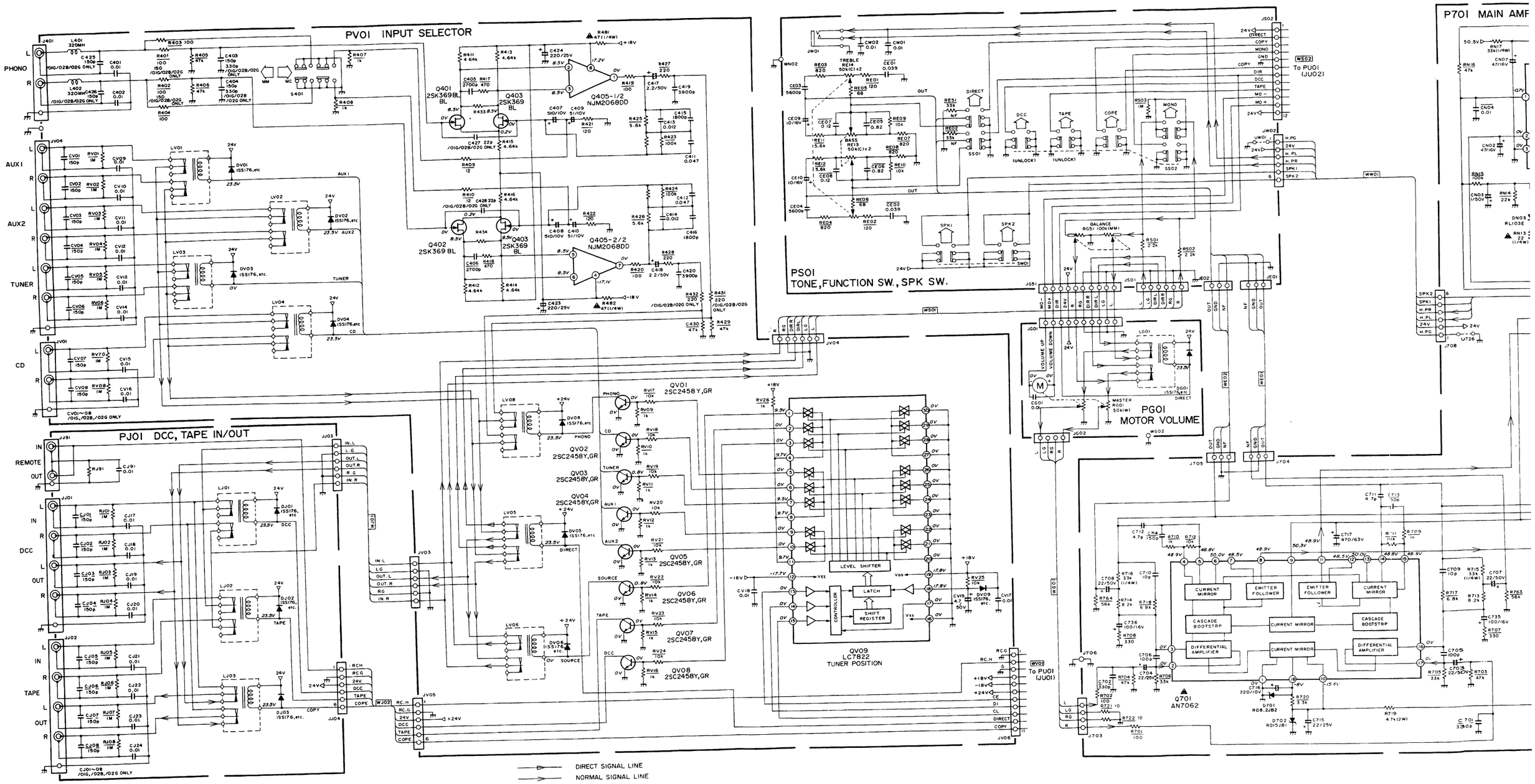
. 420mm
. 150mm
. 379mm

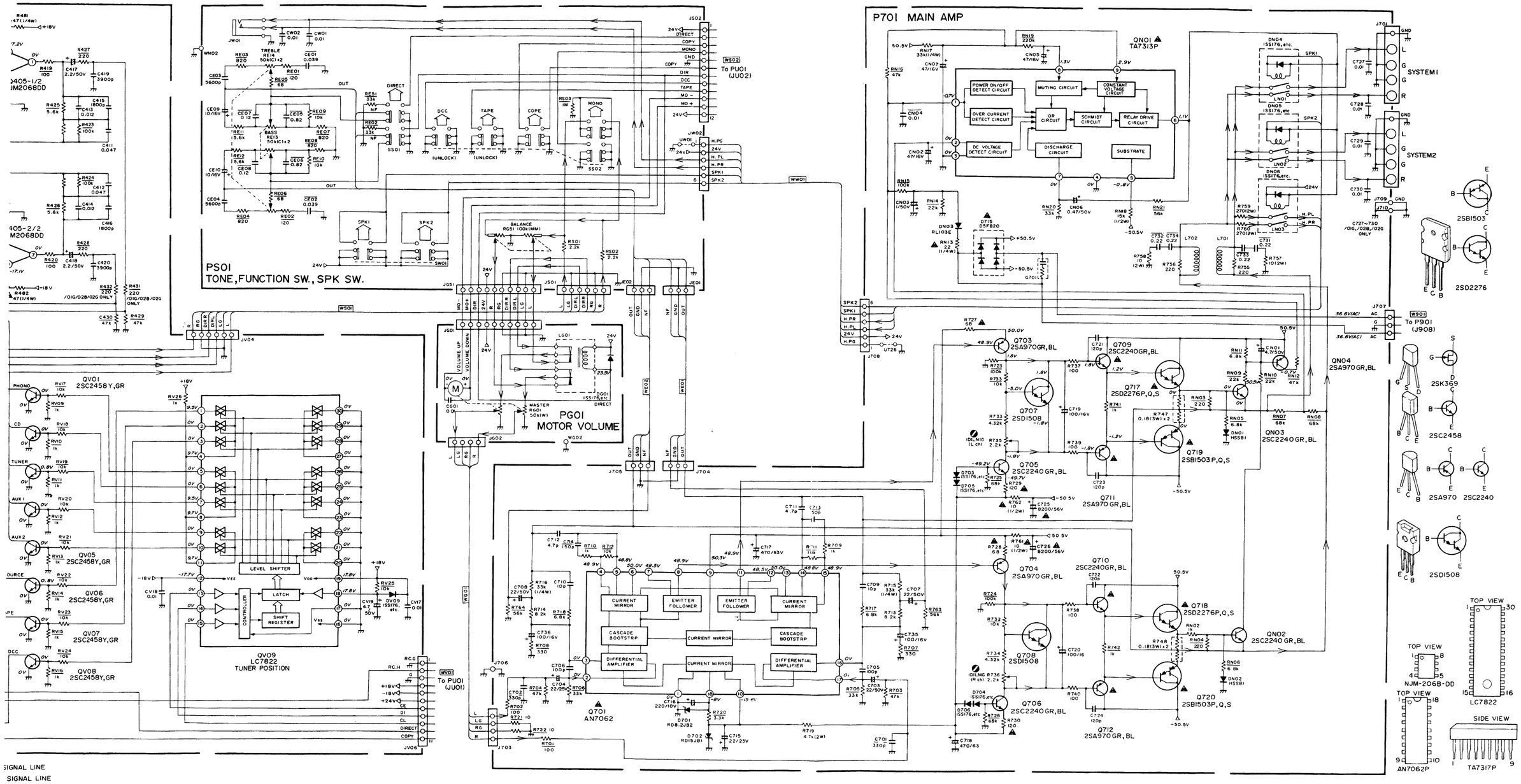
. . 9.6kg

1. BLOCK DIAGRAM

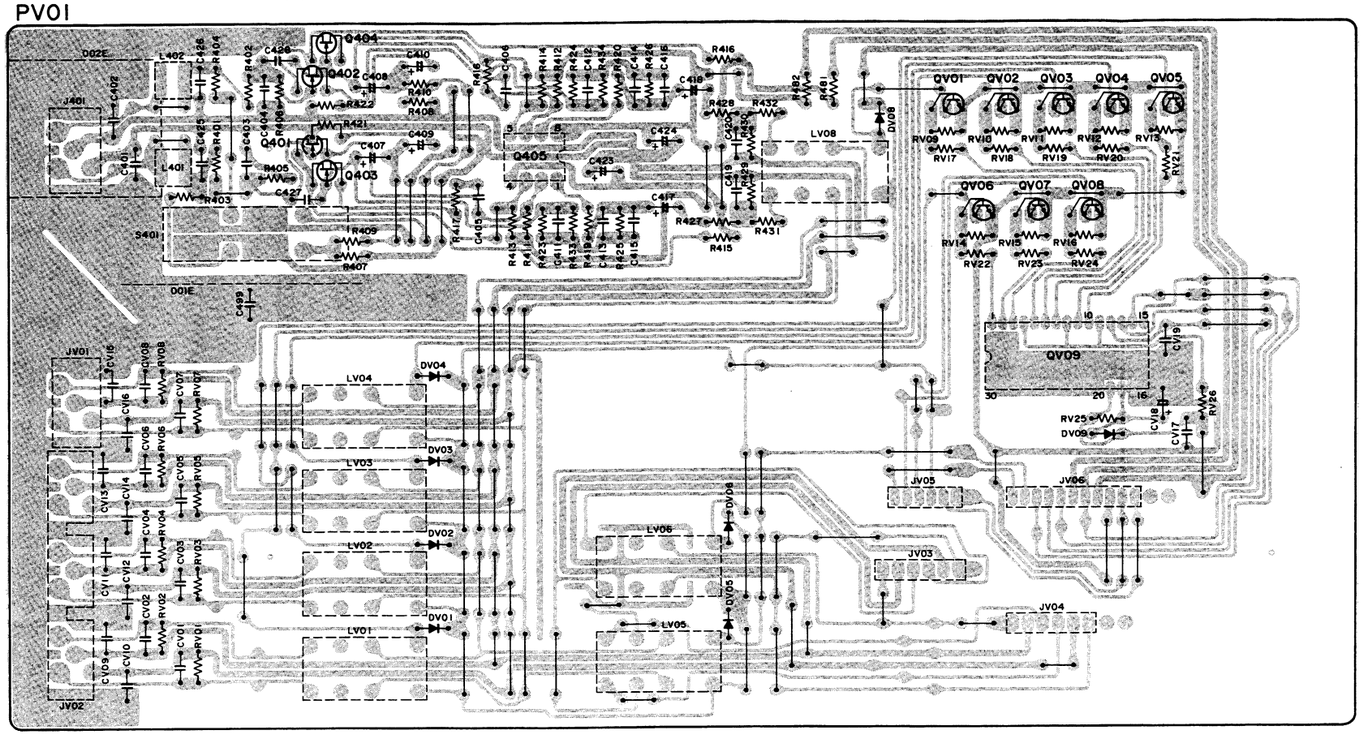


2. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern side)




P701 MAIN AMP
PSO1
TONE, FUNCTION SW., SPK SW.
PGO1
MOTOR VOLUME
QV01 2SC2458Y,GR
QV05 2SC2458Y,GR
QV06 2SC2458Y,GR
QV07 2SC2458Y,GR
QV08 2SC2458Y,GR
QV09 LC7822
TUNER POSITION
LEVEL SHIFTER
LATCH
SHIFT REGISTER
CONTROLLER
Q701 AN7062
QN01 TA7313P
POWER ON/OFF DETECT CIRCUIT
MUTING CIRCUIT
CONSTANT VOLTAGE CIRCUIT
OVER CURRENT DETECT CIRCUIT
OR CIRCUIT
SCHMIDT CIRCUIT
RELAY DRIVE CIRCUIT
DC VOLTAGE DETECT CIRCUIT
DISCHARGE CIRCUIT
SUBSTRATE
CURRENT MIRROR
EMITTER FOLLOWER
CASCADE BOOTSTRP
DIFFERENTIAL AMPLIFIER
Q703 2SA970GR,BL
Q704 2SA970GR,BL
Q705 2SC2240GR,BL
Q706 2SC2240GR,BL
Q707 2SD1508
Q708 2SD1508
Q709 2SC2240GR,BL
Q710 2SC2240GR,BL
Q711 2SA970GR,BL
Q712 2SA970GR,BL
Q717 2SD2276P,Q,S
Q718 2SD2276P,Q,S
Q719 2SB1503P,Q,S
Q720 2SB1503P,Q,S
QN02 2SC2240GR,BL
QN03 2SC2240GR,BL
QN04 2SA970GR,BL
SYSTEM1
SYSTEM2
2SB1503
2SD2276
2SK369
2SC2458
2SA970 2SC2240
2SD1508
NJM-2068DD
LC7822
AN7062P
TA7317P
TOP VIEW
SIDE VIEW
To PU01 (JU02)
To P901 (J908)
SIGNAL LINE

PV01



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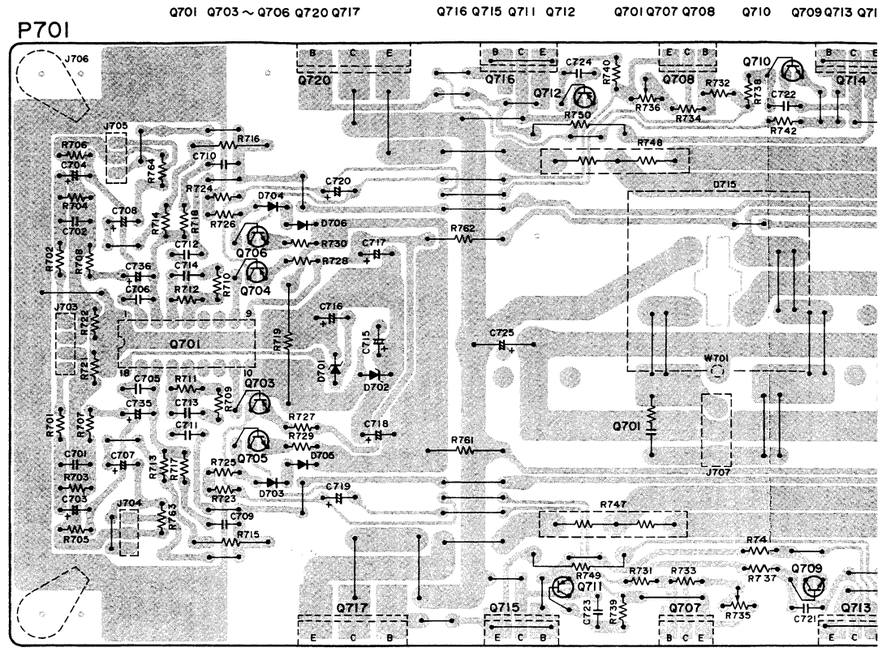
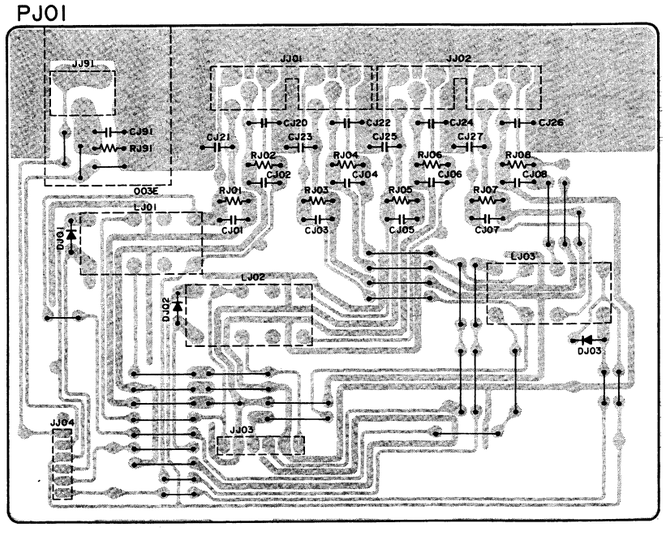
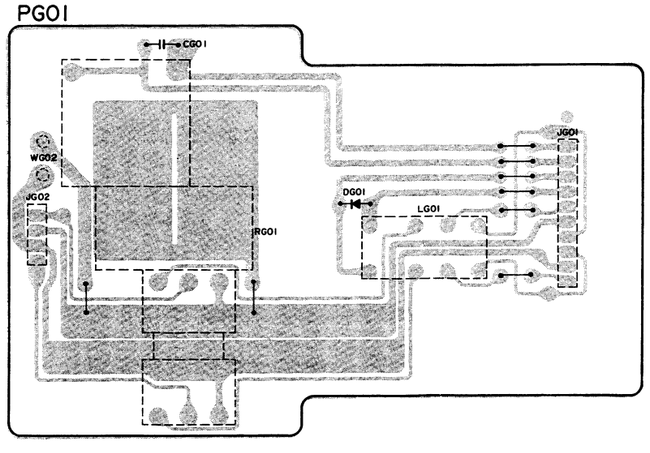


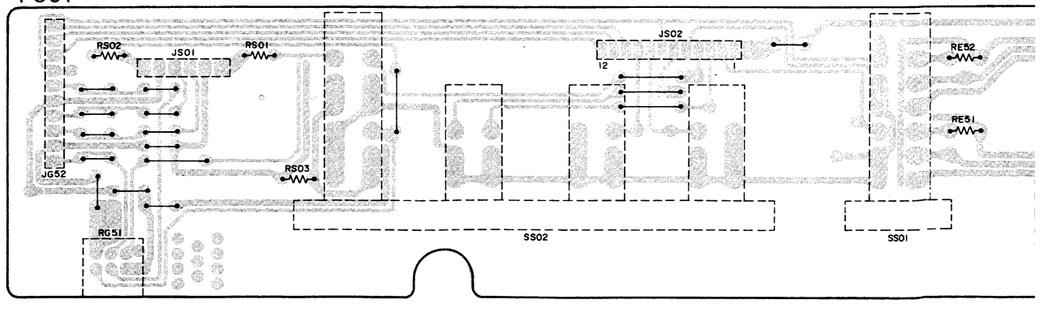
PJ01



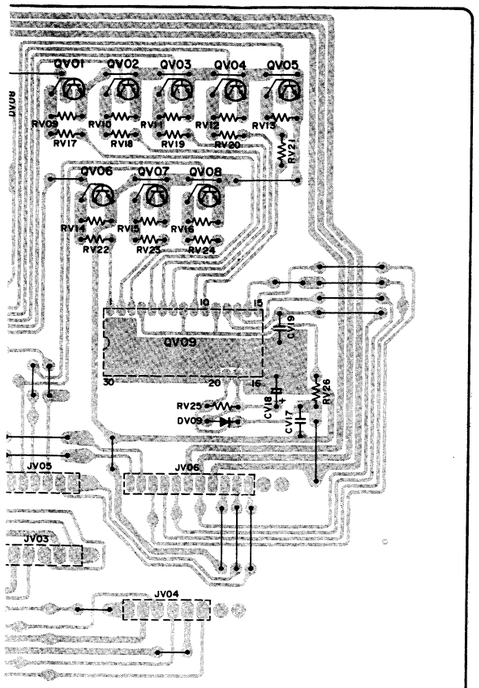
PG01



PS01

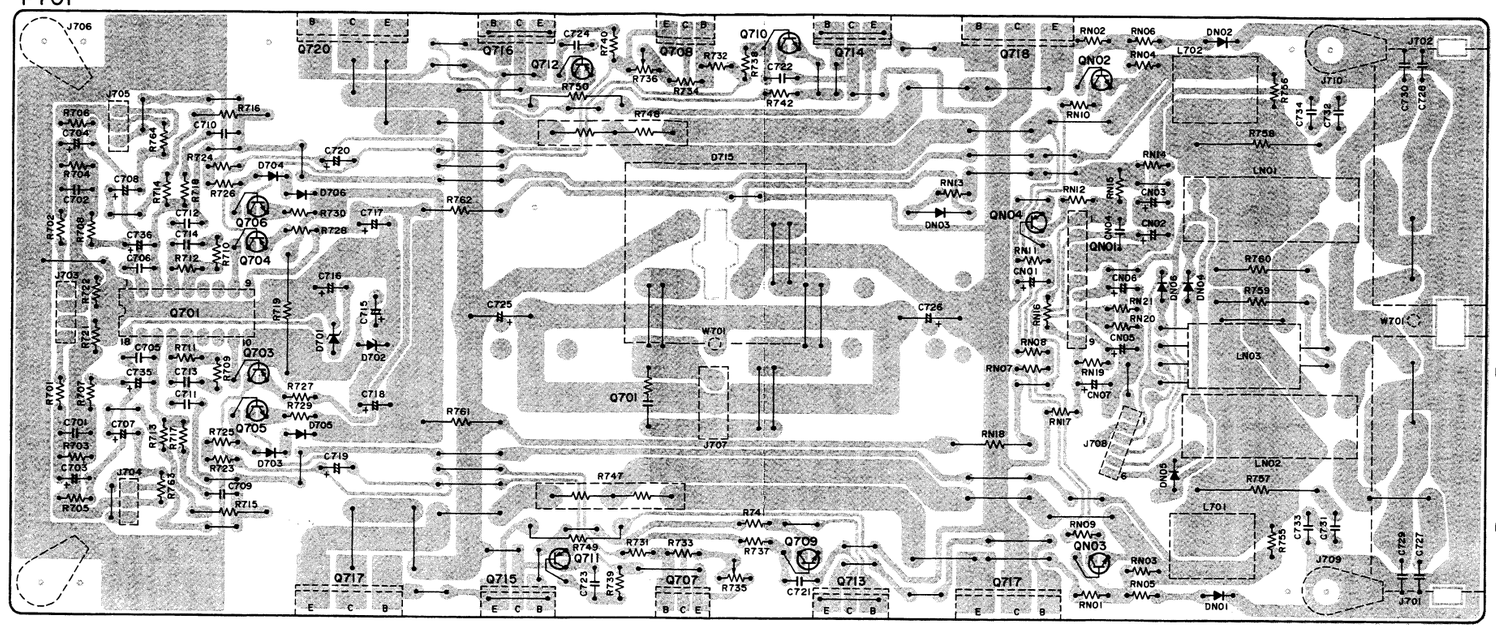


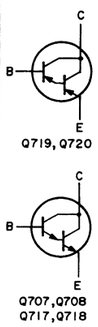
QV01 ~ QV09

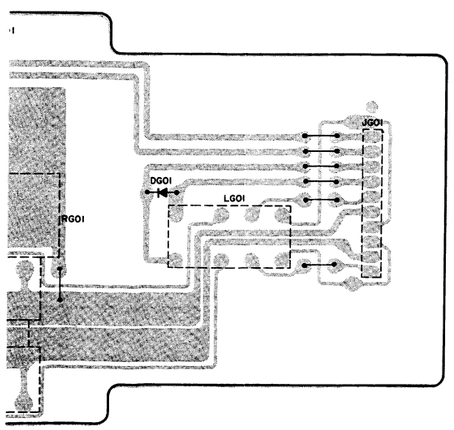


P701

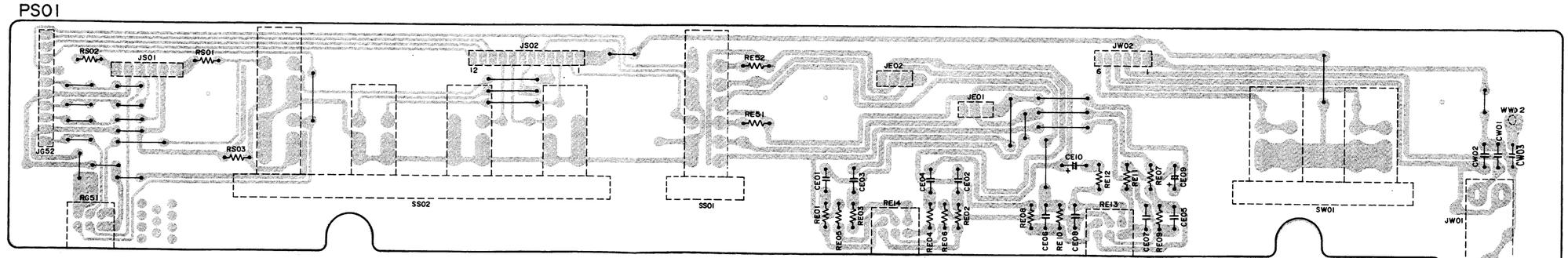
Q701 Q703 ~ Q706 Q720 Q717 Q716 Q715 Q711 Q712 Q701 Q707 Q708 Q710 Q709 Q713 Q714 Q717 QN01 ~ QN04 Q718







PS01



PU01 μ-COM AND LED AND RC EYE

QU01 TMP47C200BN

QU02 LB1630

QU10 2SA1048

QU03 2SA1048

QU04 2SC2458

QU05~QU07 2SC2458

QU08 2SA1048

QU09 2SA1048

QU11 RC. EYE

QU12 2SC2458

DU01 ISS176, etc.

DU02 RL103E

DU03 ISS178, etc.

DU51~DU60 LT3088

DU61 LT3088

XU01 4 MHz

PROGRAM COUNTER

PROGRAM MEMORY (ROM)

DATA CONVERTER TABLE

INSTRUCTION REGISTER

INSTRUCTION DECODER

DATA MEMORY (RAM)

SPW STACK

DC TC2 TC1

L REGISTOR H REGISTOR

RAM ADDERESS BUFFER

ACCUMULATOR

ALU

FLAG C Z S G

KE

INTERRUPT CONTROL

INTERRUPT PRIORITY F/F

INTERRUPT PRIORITY REGISTER

4 BIT SERIAL INTERFACE

12 BIT TIMER COUNTER(2ch)

INTEVAL TIMER

HOLD OPERATION MODE CONTROL

SYSTEM CONTROL

TIMING GENERATOR

CLOCK GENERATOR

V RET

VOLUME UP

VOLUME DOWN

UP

DOWN

P1

P2

R4

R5

R6

R7

R8

R9

K0

JU01

JU02

W01

To PV01 (JV06)

W02

To PS01 (JS02)

SU71 INPUT SELECTOR

PU71 INPUT ROTALY ENCORDER

P801 PRE POWER SUPPLY

Q801 NJM78M24FA

Q802 NJM78M06FA

Q803 NJM78M18FA

Q804 NJM79M18FA

D801~D810 S5488G

RL103E

J801

J802

W801

W901

W902

To P701 (J707)

/00/02/05/07 VERSION

P901 AC PRIMALY AND OUTLET

J901

J902

J903

J904

J905

J906

J907

J908

J909

J910

J911

J912

F901 T1.6A 250V

F902 T3.15A 250V

S901

L001

L801

L802

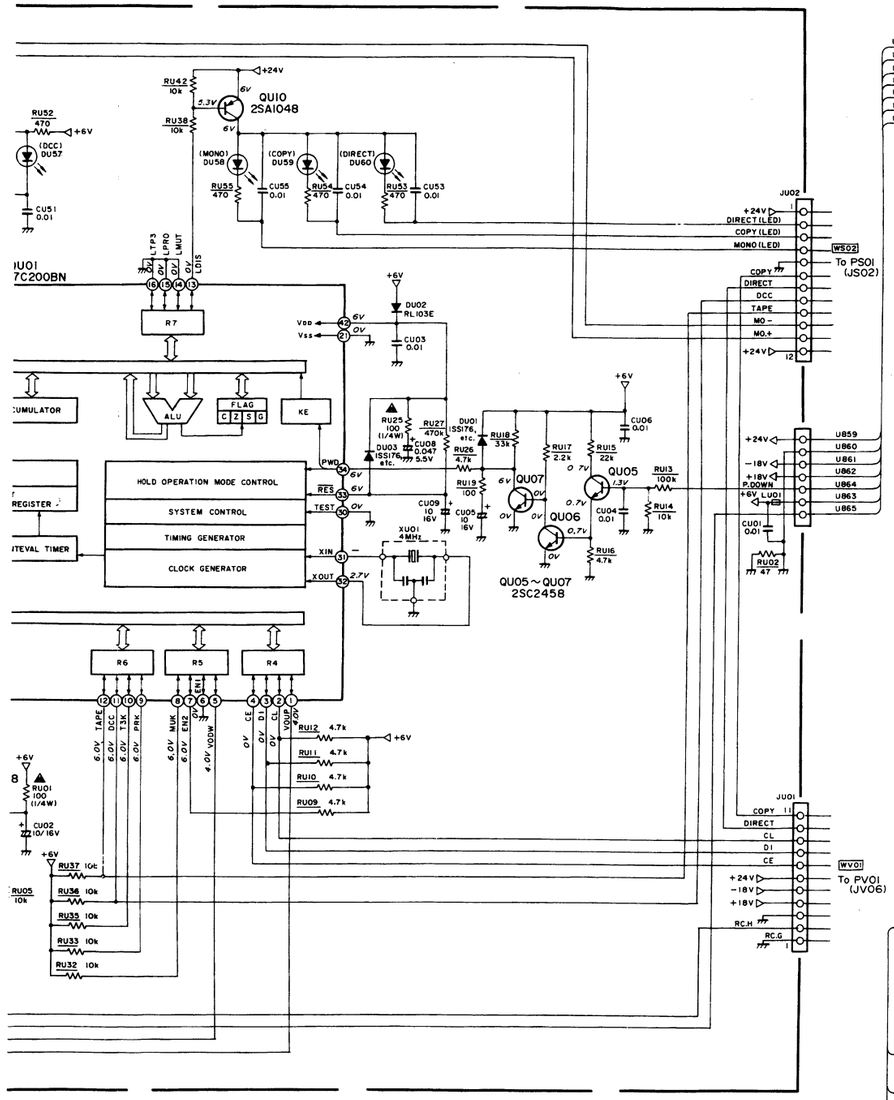
L901

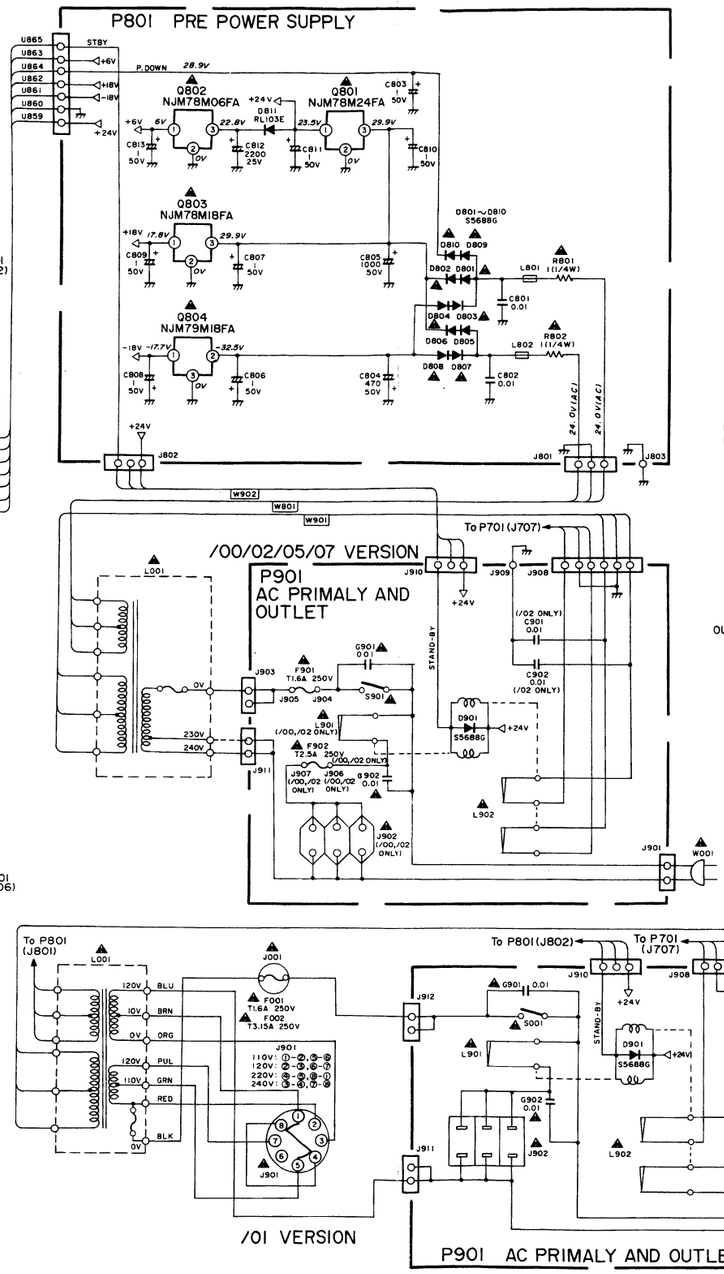
L902

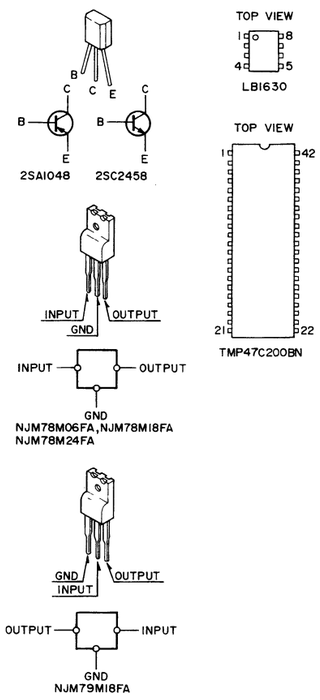
STAND-BY

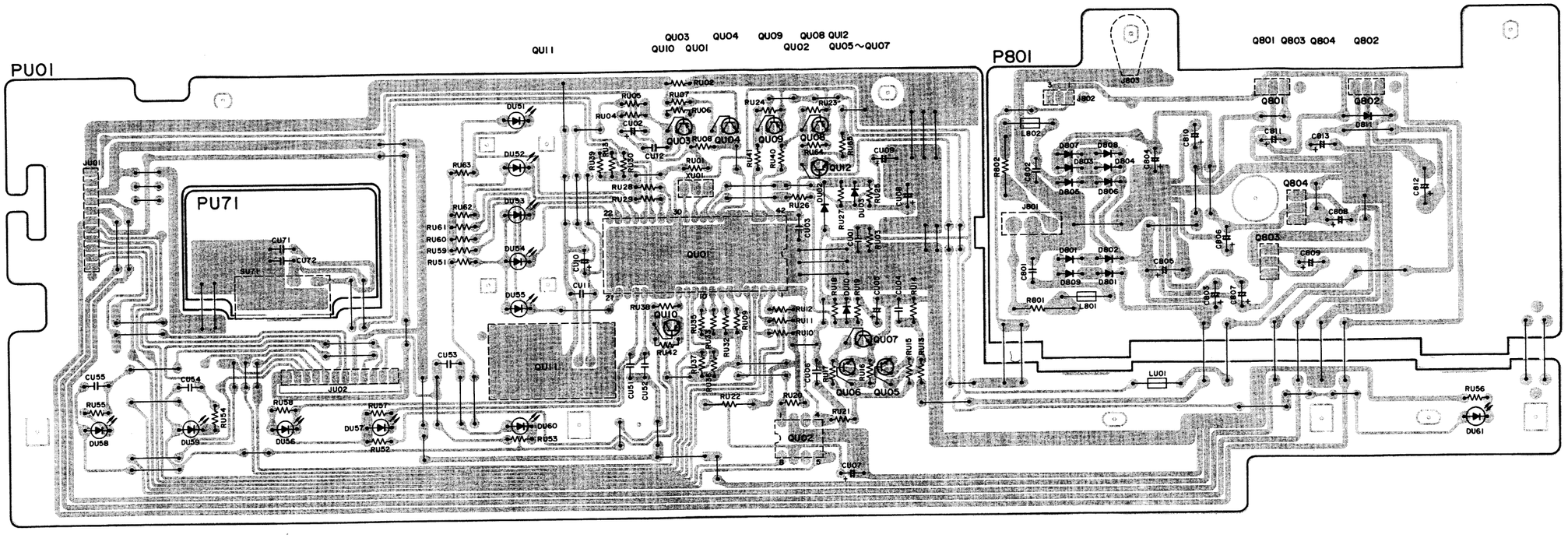
/01 VERSION

P901 AC PRIMALY


QU10
2SA1048
(DCC) DU57
(MONO) DU58
(COPY) DU59
(DIRECT) DU60
TMP47C200BN
HOLD OPERATION MODE CONTROL
SYSTEM CONTROL
TIMING GENERATOR
CLOCK GENERATOR
ALU
FLAG
KE
R7
R6
R5
R4
XU01 4MHz
QU05 ~ QU07 2SC2458
JU02
JU01
W502
To PS01 (JS02)
W501
To PV01 (JV06)


P801 PRE POWER SUPPLY
Q802 NJM78M06FA
Q801 NJM78M24FA
Q803 NJM78M18FA
Q804 NJM79M18FA
D801 ~ D810 S5688G
J802
J801
J803
W902
W801
W901
/00/02/05/07 VERSION
P901 AC PRIMALY AND OUTLET
To P701 (J707)
J903
J905
J904
J910
J909
J908
J911
J901
W001
F901 T1.6A 250V
F902 T2.5A 250V
S901
D901 S5688G
L001
L901
L902
/01 VERSION
P901 AC PRIMALY AND OUTLET
U/F VERSION
P901 AC PRIMALY AND OUTLET


2SA1048
2SC2458
TOP VIEW
LB1630
TOP VIEW
TMP47C200BN
INPUT
OUTPUT
GND
NJM78M06FA, NJM78M18FA
NJM78M24FA
NJM79M18FA


PU01
PU71
P801
QU11
QU03 QU04 QU09 QU08 QU12
QU10 QU01
QU02 QU05~QU07
Q801 Q803 Q804 Q802
JU01
JU02
QU01
QU11
QU12
QU07
QU06
QU05
QU02
XU01
LU01
J801
J802
J803
L801
L802
Q801
Q802
Q803
Q804
D801
D802
D803
D804
D805
D806
D807
D808
D809
R801
C801
C802
C803
C804
C805
C806
C807
C808
C809
C810
C811
C812
C813
DU51
DU52
DU53
DU54
DU55
DU56
DU57
DU58
DU59
DU60
DU61
RU02
RU04
RU05
RU06
RU07
RU08
RU09
RU10
RU11
RU12
RU21
RU22
RU23
RU24
RU25
RU26
RU27
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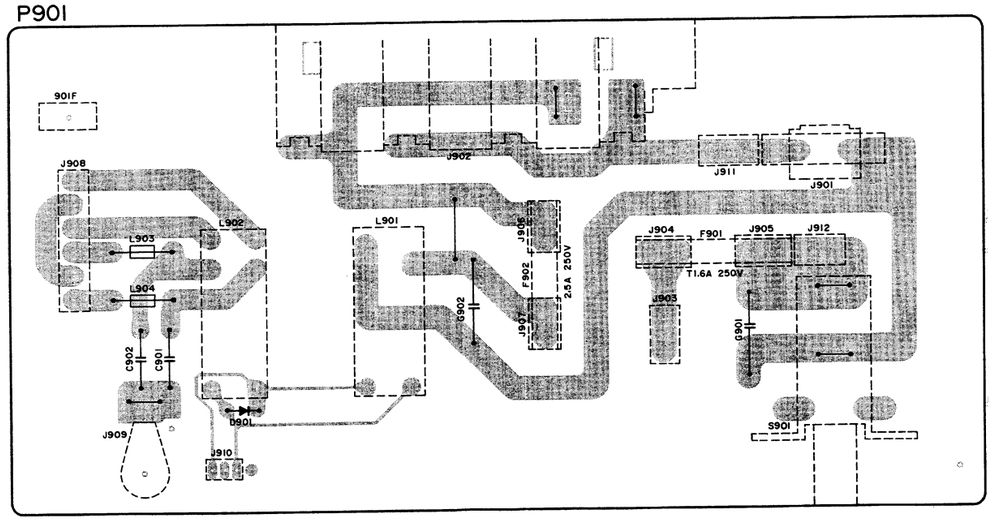
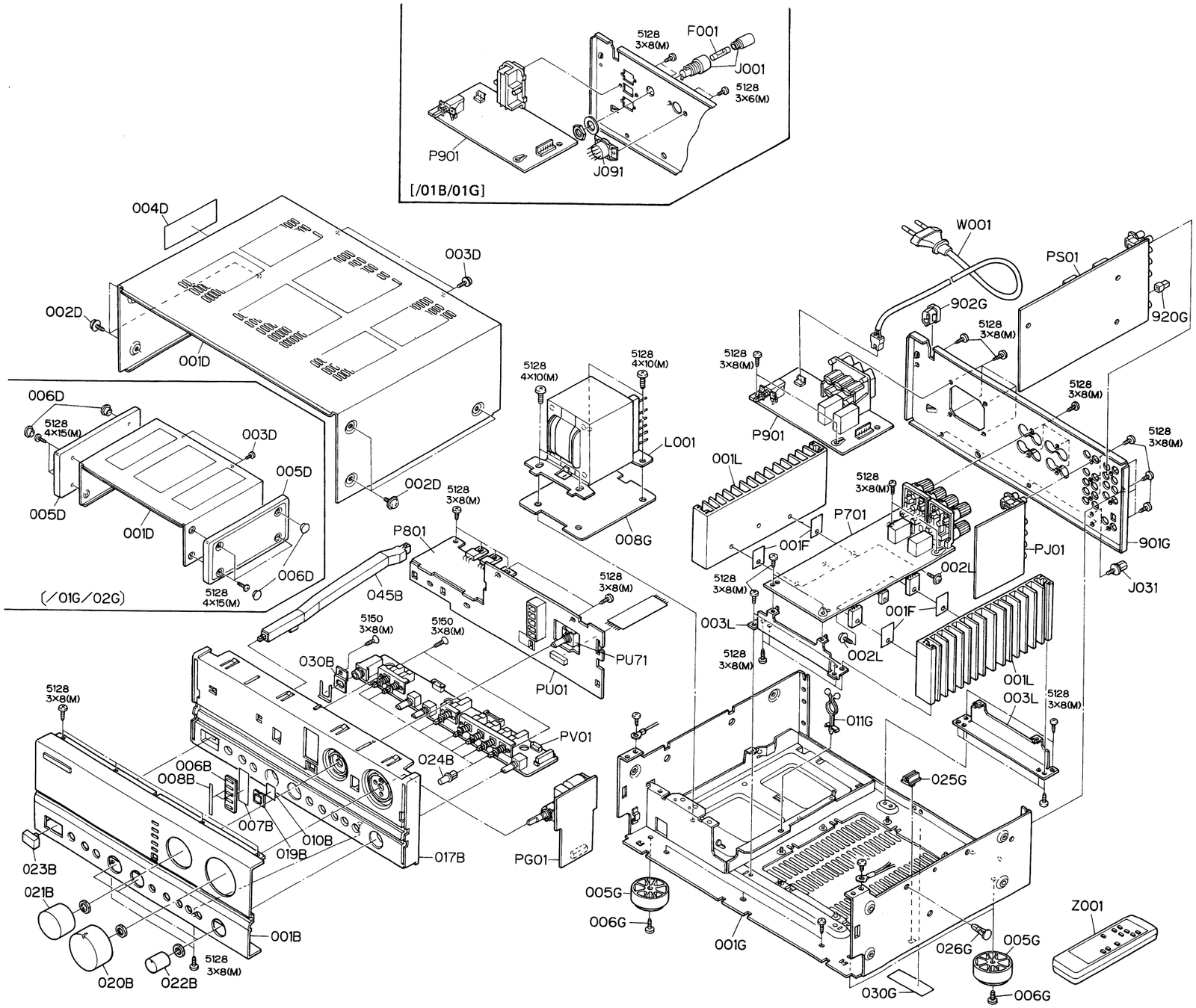
RU53
RU54
RU55
RU56
RU57
RU58
RU59
RU60
RU61
RU62
RU63
CU02
CU03
CU05
CU06
CU07
CU08
CU09
CU10
CU11
CU12
CU51
CU52
CU53
CU54
CU55
CU71
CU72
SU71
22
30
42
21


P901
901F
J908
L902
L903
L904
C902
C901
D901
J909
J910
L901
J902
J906
F902
2.5A 250V
C902
J907
J911
J901
J904
F901
T1.6A 250V
J905
J912
J903
C903
S901

3. EXPLODED VIEW AND PARTS LIST



REF DESIG.	PART NO	DESCRIPTION
001B	4822 426 51604	Front Panel Assembly [/00B/01B/02B/05B/07B]
	4822 426 51605	Front Panel Assembly [/01G/02G]
005B	4822 380 20444	Reflector
006B	4822 381 11376	Lens, Function Led
007B	4822 459 40725	Mask
008B	4822 459 11112	Sticker
017B	4822 464 90695	Chassis, Front [/00B/01B/02B/05B/07B]
	4822 447 50126	Chassis, Front [/01G/02G]
019B	4822 381 11377	Lens, Remote Control
020B	4822 413 41679	Knob, Volume [/00B/01B/02B/05B/07B]
	4822 413 41683	Knob, Volume [/01G/02G]
021B	4822 413 41745	Knob, Selector [/00B/01B/02B/05B/07B]
	4822 413 41752	Knob, Selector [/01G/02G]
022B	4822 413 41678	Knob, Control [/00B/01B/02B/05B/07B]
	4822 413 41682	Knob, Control [/01G/02G]
023B	4822 410 60194	Button, Power [/00B/01B/02B/05B/07B]
	4822 410 60358	Button, Power [/01G/02G]
024B	4822 410 60343	Button, Speaker [/00B/01B/02B/05B/07B]
	4822 410 60334	Button, Speaker [/01G/02G]
030B	4822 530 80511	Retainer, Headphone
045B	4822 404 60705	Link, Power Switch
002D	4822 501 11008	Screw (w/w) [00B/01B/02B/05B/07B]
003D	4822 502 12511	Screw (w/w)
005D	4822 447 50121	Side Panel [/01G/02G]
006D	4822 444 60607	Cap, Side Panel [/01G/02G]
001F	4822 466 92249	Insulator, DENKA SHEET
005G	4822 462 41477	Leg
006G	4822 501 11008	Screw, Leg Screw
902G	4822 532 60948	Bushing, AC Cord
920G	4822 412 20506	Knob, MM/ MC
002L	4822 502 13851	Screw, Heat-Sink
001T	4822 736 21593	User Manual
▲ F001	4822 253 30415	Fuse T1.6A 250V [/01B/01G]
▲ F002	4822 070 33152	Fuse 3.15A 250V [/01B/01G]
▲ J001	4822 256 30233	Jack, Fuse Holder [/01B/01G]
▲ J091	4822 272 10327	Voltage Selector [/01B/01G]
▲ L001	4822 146 21701	Power Transformer [/00B/02B/02G/05B/07B]
	4822 146 21702	Power Transformer [/01B/01G]
Z001	4822 218 10488	Remote Control

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4. TEST EQUIPMENT REQUIRED FOR SERVICING

Item	Use
Distortion Analyzer	Distortion measurements
Audio Oscillator	Sinewave and squarewave signal source
ACVTVM	Voltage measurements (AC)
Oscilloscope	Waveform analysis and trouble shooting and ASO alignment
Circuit Tester	Trouble shooting
DCVTVM	Voltage measurements (DC)
AC Wattmeter	Monitors primary power to amplifier
Line Voltmeter	Monitors potential of primary power to amplifier
Variable Autotransformer	Adjust level of primery power to amplifier
Shorting Plug	Shorts amplifier input to eliminate noise pickup

5. IDLING CURRENT ADJUSTMENT

(1) Before switching the power ON, set the Master Volume control to the minimum position and the Balance and Tone controls to the center positions. Also set semi-fixed resistors R735 (L CH) and R736 (R CH) on PCB P701 to the center positions.
(2) Each of the cement resistors R747 (L CH) and R748 (R CH) on the PCB P701 is provided with three test points. Connect a digital voltmeter, set for the DC voltage input, to the test points at the two extremities of the three test points of R747 or R748.
(3) After the setup above, switch the power ON and adjust semi-fixed resistor R735 (L CH) or R736 (R CH) on PCB P701 according to the digital voltmeter reading. The target setting value is 8.5 mV (23.6 mA) for both the L CH and R CH.

Please refer to the table below.

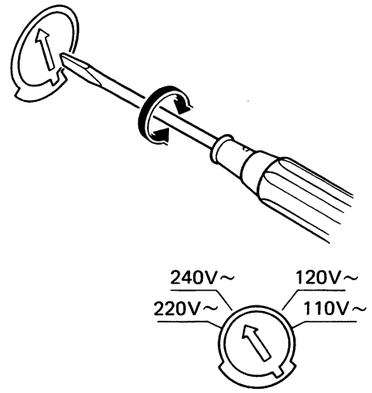
Elapsed time after power ON	Idling current setting value
30 sec. – 1 min.	7.8 mV
1 min. – 2 min.	8.2 mV
2 min. – 3 min.	8.5 mV
More than 3 min.	8.5 mV

Note on Safety:
Symbol ▲ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ▲. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

6. VOLTAGE CONVERSION

● **EUROPEAN MODEL ONLY**
To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

VOLTAGE SELECTOR

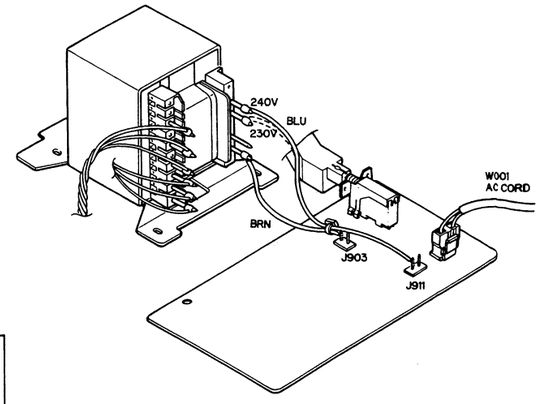


CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

7. HOW TO CHANGE THE SUPPLY VOLTAGE (/00B/02B/05B/07B Versions)

With the /05B/07B Versions, the rated supply voltage of 240V can be canged to 230V. In the same way, the 230V rated supply voltage of the /00B/02B Versions can be changed to 240V.

Refer to the following diagram for the voltage change procedure.



8. MICROPROCESSOR

QU01 : TMP47C200BN

PIN NO.	PORT NAME		I/O	ACT	FUNCTION	PIN NO.	PORT NAME		I/O	ACT	FUNCTION
1	R40	VOUP	O	L	VOLUME CONTROL (UP)	22	P20	LAX1	O	L	LED DISPLAY AUX1
2	R41	CL	O	H	SERIAL OUTPUT (CLOCK)	23	P21	LTUN	O	L	LED DISPLAY TUNER
3	R42	DI	O	H	SERIAL OUTPUT (DATA)	24	P22	LECD	O	L	LED DISPLAY CD
4	R43	CE	O	H	SERIAL OUTPUT (ENABLE)	25	P23	LPHO	O	L	LED DISPLAY PHONO
5	R50	VODW	O	L	VOLUME CONTROL (DOWN)	26	K00	1RS	I	L	ROTARY ENCORDER BIT1
6	R51	EN1	I	–	MODEL SELECT #1	27	K01	2RS	I	L	ROTARY ENCORDER BIT2
7	R52	EN2	I	–	MODEL SELECT #2	28	K02	UPK	I	L	SEQUENCE UP
8	R53	MUK	I	L	KEY INPUT MUTE	29	K03	DWK	I	L	SEQUENCE DOWN
9	R60	PRK	I	L	KEY INPUT PROCESSOR	30	TEST	TEST	–	–	NOT USED (GND.)
10	R61	T3K	I	L	KEY INPUT TAPE3	31	XIN	XIN	–	–	CLOCK 4.00MHz
11	R62	T2K	I	L	KEY INPUT TAPE2	32	XOUT	XOUT	–	–	
12	R63	T1K	I	L	KEY INPUT TAPE1	33	$\overline{\text{RESET}}$	RES	I	L	RESET
13	R70	LDIS	O	L	LED DISPLAY OTHER	34	$\overline{\text{HOLD}}$	PDW	I	L	POWER DOWN CHECK
14	R71	LMUT	O	L	LED DISPLAY MUTE	35	R80	RMC	I	L	REMOTE CONTROL (RC-5) INPUT
15	R72	LPRO	O	L	LED DISPLAY PROCESSOR	36	R81	FMUT	O	L	KMUT + MMUT
16	R73	LTP3	O	L	LED DISPLAY TAPE3	37	R82	KMUT	O	L	FUNCTION MUTING
17	P10	LTP2	O	L	LED DISPLAY TAPE2	38	R83	MMUT	O	L	MANUAL MUTING
18	P11	LTP1	O	L	LED DISPLAY TAPE1	39	R90	LPOW	O	L	LED DISPLAY POWER
19	P12	LSOU	O	L	LED DISPLAY SOURCE	40	R91	LSTB	O	L	LED DISPLAY STAND-BY
20	P13	LAX2	O	L	LED DISPLAY AUX2	41	R92	RELY	O	H	STAND-BY RELAY CONTROL
21	VSS	VSS	–	–	GND.	42	VDD	VDD	–	–	POWER SUPPLY +5.4V

9. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R***: (1) GD05 --- 140, Carbon film fixed resistor, ±5%, 1/4W
R***: (2) GD05 --- 160, Carbon film fixed resistor, ±5%, 1/6W
① — Resistance value

Examples
① Resistance value

0.1Ω...001	10Ω...100	1kΩ...102	100kΩ...104
0.5Ω...005	18Ω...180	2.7kΩ...272	680kΩ...684
1Ω...010	100Ω...101	10kΩ...103	1MΩ...105
6.8Ω...068	390Ω...391	22kΩ...223	4.7MΩ...475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C***: CERAMIC CAP.
(1) DD1 --- 370, Ceramic condenser
Disc type
①② Temp. coeff. P350 ~ N1000, 50V
Capacity value
Tolerance

Examples
① Tolerance (Capacity deviation)
±0.25pF...0
±0.5pF...1
±5%...5
* Tolerance of COMMON PARTS handled here are as follows:
0.5pF ~ 5pF...±0.25pF
6pF ~ 10pF...±0.5pF
12pF ~ 560pF...±5%
② Capacity value

0.5pF...005	3pF...030	100pF...101
1pF...010	10pF...100	220pF...221
1.5pF...015	47pF...470	560pF...561

C***: CERAMIC CAP.
(1) DK16 --- 300, High dielectric constant ceramic condenser
Disc type
① Temp. chara. 2B4, 50V
Capacity value

Example
② Capacity value

100pF...101	1000pF...102	10000pF...103
470pF...471	2200pF...222	

C***: ELECTROLY CAP. (⧧), FILM CAP. (⧦)
(1) EA ------ 10, Electrolytic condenser
One-way lead type, Tolerance ±20%
①② Dielectric strength
Capacity value

Examples
① Capacity value

0.1μF...104	4.7μF...475	100μF...107
0.33μF...334	10μF...106	330μF...337
1μF...105	22μF...226	1100μF...108
		2200μF...228

② Working voltage

6.3V...006	25V...025	
10V...010	35V...035	
16V...016	50V...050	

(2) DF15 --- 350, Plastic film condenser
One-way type, Mylar ±5% 50V
① Capacity value

Examples
① Capacity value

0.001μF (1000pF)...102	0.1μF...104
0.0018μF.....182	0.56μF...564
0.01μF.....103	1μF...105
0.015μF.....153	

NOTE ON SAFETY :
Symbol ▲ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ▲ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

REF DESIG.	PART NO	DESCRIPTION
		PG01-MOTOR VOLUME CIRCUIT BOARD
CG01	4822 122 32486	Ceramic,Cap. 0.01μF +80% -20%
RG01	4822 100 11949	Variable Resistor 50KΩ Master
RG51	4822 101 30652	Variable Resistor 100KΩ (MN) Balance
DG01	4822 130 33305	Diode 1SS176, etc.
LG01	4822 280 20469	Relay SVR24A
		PJ01-DCC&TAPE IN/OUT CIRUIT BOARD
CJ20 ~ CJ27	4822 122 32486	Ceramic,Cap. 0.01μF +80% -20%
CJ91	4822 122 40617	Ceramic,Cap. 0.1μF +80% -20%
DJ01	4822 130 33305	Diode 1SS176, etc.
DJ02	4822 130 33305	Diode 1SS176, etc.
DJ03	4822 130 33305	Diode 1SS176, etc.
JJ01	4822 266 30284	Terminal, 4P RCA
JJ02	4822 266 30284	Terminal, 4P RCA
JJ91	4822 266 30274	Terminal, 2P RCA
LJ01	4822 280 20469	Relay SVR24A
LJ02	4822 280 20469	Relay SVR24A
LJ03	4822 280 20469	Relay SVR24A
		PS01-TONE&FUNCTION SW &SPK SW. CIRUIT BOARD
		PS01-CAPACITORS
CE09	4822 124 90352	Elect 10μF 16V
CE10	4822 124 90352	Elect 10μF 16V
CW01	4822 122 32486	Ceramic 0.01μF +80% -20% [/01G/02B/02G]
CW02	4822 122 32486	Ceramic 0.01μF +80% -20% [/01G/02B/02G]
		PS01-RESISTORS
RE13	4822 101 30654	50KΩ (C) Variable, Bass
RE14	4822 101 30654	50KΩ (C) Variable, Treble
		PS01-MISCELLANEOUS
JW01	4822 267 31274	Jack Headphone [/00B/01B/02B/05B/07B]
	4822 267 31365	Jack Headphone [/01G/02G]
SS01	4822 276 12223	Push switch SOURCE DIRECT
SS02	4822 276 40418	Push switch DCC/TAPE/COPY
SW01	4822 276 12428	Push switch, Speaker
		PU01-U-COM&LED&RC EYE CIRCUIT BOARD
		PU01-CAPACITORS
CU01	4822 122 32486	Ceramic 0.01μF +80% -20%
CU02	4822 124 90353	Elect 100μF 10V
CU03	4822 122 40617	Ceramic 0.1μF +80% -20%
CU04	4822 122 32486	Ceramic 0.01μF +80% -20%
CU05	4822 124 90352	Elect 10μF 16V
CU06	4822 122 32486	Ceramic 0.01μF +80% -20%
CU07	4822 124 90352	Elect 10μF 16V
CU08	4822 124 23128	Elect 0.047F 5.5V
CU09	4822 124 90352	Elect 10μF 16V
CU10	4822 124 90352	Elect 10μF 16V
CU11	4822 122 32486	Ceramic 0.01μF +80% -20%
CU51 ~ CU54	4822 122 32486	Ceramic 0.01μF +80% -20%
CU55	4822 122 32486	Ceramic 0.01μF +80% -20%

REF DESIG.	PART NO	DESCRIPTION
		PU01-RESISTORS
▲RU01	4822 115 90167	100Ω ±2% 1/4W (Fusible)
▲RU22	4822 116 60309	2.2Ω ±5% 1/4W (Fusible)
▲RU25	4822 115 90167	100Ω ±2% 1/4W (Fusible)
▲RU39	4822 115 90167	100Ω ±2% 1/4W (Fusible)
		PU01-SEMICONDUCTORS
DU01	4822 130 33305	Diode 1SS176, etc.
DU02	4822 130 32508	Diode RL103E/DSF10C.
DU03	4822 130 33305	Diode 1SS176, etc.
DU51 ~ DU61	4822 130 80326	L.E.D. LT3D8B (RED)
QU01	4822 209 31741	Microprocessor TMP47C200BN-G927
QU02	4822 209 73287	IC LB1630
QU03	4822 130 60107	Transistor 2SA1048 (Y, GR)
QU04	4822 130 60839	Transistor 2SC2458 (Y, GR)
QU05	4822 130 60839	Transistor 2SC2458 (Y, GR)
QU06	4822 130 60839	Transistor 2SC2458 (Y, GR)
QU07	4822 130 60839	Transistor 2SC2458 (Y, GR)
QU08	4822 130 60107	Transistor 2SA1048 (Y, GR)
QU09	4822 130 60107	Transistor 2SA1048 (Y, GR)
QU10	4822 130 60107	Transistor 2SA1048 (Y, GR)
QU11	4822 130 83234	Photo unit IR-Receiver
QU12	4822 130 60839	Transistor 2SC2458 (Y, GR)
		PU01-MISCELLANEOUS
LU01	4822 158 60605	Ferrit beads
XU01	4822 242 72223	Ceramic Resonator 4.00MHz
		PU71-INPUT ROTALY ENCORDER CIRUIT BOARD
CU71	4822 122 32486	Ceramic Cap. 0.01μF +80% -20%
CU72	4822 122 32486	Ceramic Cap. 0.01μF +80% -20%
SU71	4822 273 20368	Rotary switch, Encoder
		PV01-INPUT SELECTOR CIRCIT BOARD
		PV01-CAPACITORS
CV09 ~ CV17	4822 122 32486	Ceramic 0.01μF +80% -20%
CV18	4822 124 22274	Elect 4.7μF 50V
CV19	4822 122 32486	Ceramic 0.01μF +80% -20%
C401	4822 122 32486	Ceramic 0.01μF +80% -20%
C402	4822 122 32486	Ceramic 0.01μF +80% -20%
C403	4822 121 50416	Film 150pF ±5% [/00B/01B/05B/07B]
C403	4822 126 11071	Ceramic 330pF ±10% [/01G/02B/02G]
C404	4822 121 50416	Film 150pF ±5% [/00B/01B/05B/07B]
C404	4822 126 11071	Ceramic 330pF ±10% [/01G/02B/02G]
C407	4822 124 22279	Elect 510μF 10V
C408	4822 124 22279	Elect 510μF 10V
C409	4822 124 22278	Elect 51μF 10V
C410	4822 124 22278	Elect 51μF 10V
C411	4822 121 42764	Film 0.047μF ±5%
C412	4822 121 42764	Film 0.047μF ±5%
C413	4822 121 42755	Film 0.012μF ±5%
C414	4822 121 42755	Film 0.012μF ±5%
C415	4822 121 42758	Film 1800pF ±5%
C416	4822 121 42758	Film 1800pF ±5%
C417	4822 124 90357	Elect 2.2μF 50V
C418	4822 124 90357	Elect 2.2μF 50V
C419	4822 121 70198	Film 3900pF ±5%
C420	4822 121 70198	Film 3900pF ±5%
C423	4822 124 90051	Elect 220μF 25V
C424	4822 124 90051	Elect 220μF 25V
C425	4822 126 11069	Ceramic 150pF ±10% [/01G/02B/02G]
C426	4822 126 11069	Ceramic 150pF ±10% [/01G/02B/02G]

REF DESIG.	PART NO	DESCRIPTION
C427	4822 126 10326	Ceramic 22pF
C428	4822 126 10326	Ceramic 22pF
		PV01-RESISTORS
R411 ~ R416	4822 050 24642	4.64KΩ ±1% 1/6W
▲R481	4822 111 90731	47Ω ±2% 1/4W Fasible
▲R482	4822 111 90731	47Ω ±2% 1/4W Fasible
		PV01-SEMICONDUCTORS
DV01 ~ DV06	4822 130 33305	Diode 1SS176, etc.
DV08	4822 130 33305	Diode 1SS176, etc.
DV09	4822 130 33305	Diode 1SS176, etc.
QV01 ~ QV08	4822 130 60839	Transistor 2SC2458 (Y, GR)
QV09	4822 209 73321	IC LC7822
Q401 ~ Q404	4822 130 42839	F.E.T. 2SK369 (BL)
Q405	4822 209 73064	IC NJM2068DD
		PV01-MISCELLANEOUS
JV01	4822 266 30282	Terminal, 2P RCA
JV02	4822 266 30285	Terminal, 6P RCA
J401	4822 266 30282	Terminal, 2P RCA
LV01 ~ LV06	4822 280 20469	Relay SVR24A
LV08	4822 280 20469	Relay SVR24A
L401	4822 156 11019	Choke coil 320mH [/01G/02B/02G]
L402	4822 156 11019	Choke coil 320mH [/01G/02B/02G]
S401	4822 276 20468	Push Switch, MM/MC
		P701-MAIN AMP CIRCUIT BOARD
		P701-CAPACITORS
CN01	4822 124 22274	Elect 4.7μF 50V
CN02	4822 124 41539	Elect 47μF 16V
CN03	4822 124 41543	Elect 1μF 50V
CN05	4822 124 41539	Elect 47μF 16V
CN06	4822 124 22273	Elect 0.47μF 50V
CN07	4822 124 41539	Elect 47μF 16V
C701	4822 121 51621	Film 330pF ±5% [/00B/01B/05B/07B]
C702	4822 121 51621	Film 330pF ±5% [/00B/01B/05B/07B]
C703	4822 124 90361	Elect 22μF 25V
C704	4822 124 90361	Elect 22μF 25V
C705	4822 126 10364	Ceramic 100pF ±10%
C706	4822 126 10364	Ceramic 100pF ±10%
C707	4822 124 90362	Elect 22μF 50V
C708	4822 124 90362	Elect 22μF 50V
C709	4822 122 33792	Ceramic 10pF
C710	4822 122 33792	Ceramic 10pF
C711	4822 126 11557	Ceramic 4.7pF ±10%
C712	4822 126 11557	Ceramic 4.7pF ±10%
C713	4822 121 50416	Film 150pF ±5%
C714	4822 121 50416	Film 150pF ±5%
C715	4822 124 90361	Elect 22μF 25V
C716	4822 124 90363	Elect 220μF 10V
C717	4822 124 23071	Elect 470μF 63V
C718	4822 124 23071	Elect 470μF 63V
C719	4822 124 90354	Elect 100μF 16V
C720	4822 124 90354	Elect 100μF 16V
C721 ~ C724	4822 121 50548	Film 120pF ±5%
▲C725	4822 124 23762	Elect 8200μF 56V
▲C726	4822 124 23762	Elect 8200μF 56V
C727	4822 122 32486	Ceramic 0.01μF +80% -20% [/01G/02B/02G]

REF DESIG.	PART NO	DESCRIPTION
C728	4822 122 32486	Ceramic 0.01μF +80% -20% [/01G/02B/02G]
C729	4822 122 32486	Ceramic 0.01μF +80% -20% [/01G/02B/02G]
C730	4822 122 32486	Ceramic 0.01μF +80% -20% [/01G/02B/02G]
C735	4822 124 90354	Elect 100μF 16V
C736	4822 124 90354	Elect 100μF 16V
G701	4822 126 12453	Ceramic 0.01μF +80% -20% [/01B/01G/07B]
G701	4822 126 11235	Cap. Comp. 0.047μF +6.8Ω [/00B/02B/02G/05B]
		P701-RESISTORS
RN01	4822 052 10102	1KΩ ±5% 1/6W
RN02	4822 052 10102	1KΩ ±5% 1/6W
▲RN13	4822 113 90119	22Ω ±2% 1/4W (Fusible)
RN17	4822 050 23303	33KΩ ±5% 1/4W
RN18	4822 050 21503	15KΩ ±5% 1/2W
R715	4822 050 23303	33KΩ ±5% 1/4W
R716	4822 050 23303	33KΩ ±5% 1/4W
R719	4822 053 11472	4.7KΩ ±5% 2W
▲R727	4822 050 26809	68Ω ±5% 1/6W
▲R728	4822 050 26809	68Ω ±5% 1/6W
▲R729	4822 117 10159	120Ω ±5% 1/6W
▲R730	4822 117 10159	120Ω ±5% 1/6W
R733	4822 117 10168	4.32KΩ ±1% 1/6W
R734	4822 117 10168	4.32KΩ ±1% 1/6W
R735	4822 100 20681	2.2KΩ, Trimming
R736	4822 100 20681	2.2KΩ, Trimming
R737	4822 052 10101	100Ω ±5% 1/6W
R740		
R747	4822 116 82049	0.18Ωx2 3W, Array
R748	4822 116 82049	0.18Ωx2 3W, Array
R755	4822 052 10221	220Ω ±5% 1/6W
R756	4822 052 10221	220Ω ±5% 1/6W
R757	4822 053 11109	10Ω ±5% 2W
R758	4822 053 11109	10Ω ±5% 2W
R759	4822 116 60455	270Ω ±5% 2W
R760	4822 116 60455	270Ω ±5% 2W
▲R761	4822 116 60313	10Ω ±5% 1/2W (Fusible)
▲R762	4822 116 60313	10Ω ±5% 1/2W (Fusible)
		P701-SEMICONDUCTORS
DN01	4822 130 80837	Diode HSS81
DN02	4822 130 80837	Diode HSS81
DN03	4822 130 32508	Diode RL103E/DSF10C
DN04	4822 130 33305	Diode 1SS176, etc.
DN05	4822 130 33305	Diode 1SS176, etc.
DN06	4822 130 33305	Diode 1SS176, etc.
D701	4822 130 80273	Zever, RD8.2JB2/MTZJ8.2C
D702	4822 130 80322	Zever, RD15JB3/MTZJ16A
D703	4822 130 33305	Diode 1SS176, etc.
D706		
▲D715	4822 130 33132	Diode D5FB20
▲QN01	4822 209 83312	IC TA7317P
QN02	4822 130 43233	Transistor 2SC2240 (GR,BL)
QN03	4822 130 43233	Transistor 2SC2240 (GR,BL)
QN04	4822 130 42951	Transistor 2SA970 (GR,BL)
▲Q701	4822 209 83732	IC AN7062P
Q703	4822 130 42951	Transistor 2SA970 (GR,BL)
Q704	4822 130 42951	Transistor 2SA970 (GR,BL)
Q705	4822 130 43233	Transistor 2SC2240 (GR,BL)
Q706	4822 130 43233	Transistor 2SC2240 (GR,BL)
Q707	4822 130 60526	Transistor 2SD1508
Q708	4822 130 60526	Transistor 2SD1508
▲Q709	4822 130 43233	Transistor 2SC2240 (GR,BL)
▲Q710	4822 130 43233	Transistor 2SC2240 (GR,BL)
▲Q711	4822 130 42951	Transistor 2SA970 (GR,BL)
▲Q712	4822 130 42951	Transistor 2SA970 (GR,BL)
▲Q717	4822 130 62738	Transistor 2SD2276 (P, Q, S)
▲Q718	4822 130 62738	Transistor 2SD2276 (P, Q, S)
▲Q719	4822 130 62737	Transistor 2SB1503 (P, Q, S)
▲Q720	4822 130 62737	Transistor 2SB1503 (P, Q, S)

REF DESIG.	PART NO	DESCRIPTION
		P701-MISCELLANEOUS
J701	4822 290 60837	Terminal, Speaker
J702	4822 290 60836	Terminal, Speaker
LN01	4822 280 70354	Relay 24MBU510UL3
LN02	4822 280 70354	Relay 24MBU510UL3
LN03	4822 280 20196	Relay L24M
L701	4822 157 63085	Air Coil
L702	4822 157 63085	Air Coil
		P801-PRE POWER SUPPLY CIRUIT BOARD
		P801-CAPACITORS
C801	4822 122 32486	Ceramic 0.01μF +80% -20%
C802	4822 122 32486	Ceramic 0.01μF +80% -20%
C803	4822 124 41543	Elect 1μF 50V
C804	4822 124 41542	Elect 470μF 50V
C805	4822 124 23918	Elect 1000μF 50V
C806	4822 124 41543	Elect 1μF 50V
C811		
C812	4822 124 90367	Elect 2200μF 25V
C813	4822 124 41543	Elect 1μF 50V
		P801-RESISTORS
▲R801	4822 117 10158	10Ω ±5% 1/4W
▲R802	4822 117 10158	10Ω ±5% 1/4W
		P801-SEMICONDUCTORS
▲D801	4822 130 80839	Diode S5688G
▲D802	4822 130 80839	Diode S5688G [/02B/02G/05B]
▲D803	4822 130 80839	Diode S5688G
▲D804	4822 130 80839	Diode S5688G [/02B/02G/05B]
▲D805	4822 130 80839	Diode S5688G
▲D806	4822 130 80839	Diode S5688G [/02B/02G/05B
▲D807	4822 130 80839	Diode S5688G
▲D808	4822 130 80839	Diode S5688G [/02B/02G/05B]
▲D809	4822 130 80839	Diode S5688G
▲D810	4822 130 80839	Diode S5688G [/02B/02G/05B]
D811	4822 130 32508	Diode RL103E/DSF10C
▲Q801	4822 209 83823	IC NJM78M24FA
▲Q802	4822 209 62423	IC NJM78M06FA
▲Q803	4822 209 80675	IC NJM78M18FA
▲Q804	4822 209 31788	IC NJM79M18FA
		P801-MISCELLANEOUS
L801	4822 158 60605	Ferrite Core
L802	4822 158 60605	Ferrite Core
		P901-AC PRIMALY&OUTLET CIRUIT BOARD
C901	4822 126 12453	Ceramic, Cap. 0.01μF +80% -20% [/01G/02B/02G]
C902	4822 126 12453	Ceramic, Cap. 0.01μF +80% -20% [/01G/02B/02G]
▲G901	4822 122 33276	Ceramic, Cap. 0.01μF +80% -20% [/05B]
	4822 121 43732	Film, Cap. 0.01μF ±20% [/00B/01B/01G/02B/02G/07B]
▲G902	4822 121 43732	Film, Cap. 0.01μF ±20% [/00B/01B/01G/02B/02G]
▲D901	4822 130 80839	Diode S5688G
▲F901	4822 253 30415	Fuse T1.6A 250V [/00B/02B/02G/05B/07B]
▲F902	4822 253 40166	Fuse T2.5A 250V [/00B/02B/02G]
▲J902	4822 265 31056	Jack, AC Outlet 3P [/00B/02B/02G]
	4822 267 40815	Jack, AC Outlet 3P [/01B/01G]
▲L901	4822 280 20517	Relay [/00B/01B/01G/02B/02G]
▲L902	4822 280 20518	Relay
L903	4822 158 60605	Ferrite Core
L904	4822 158 60605	Ferrite Core
▲S901	4822 276 12924	Push Switch, Power

Different Parts between model PM-62 and PM-62mk II

PM-62			PM-62mk II	DESCRIPTION
PAGE	POS. NO.	PARTSCFODE NO.	PARTSCODE NO.	
16	001B	4822 426 51604	4822 426 51757	Front Panel Assembly, Black [/20B/21B/22B/25B/27B]
		4822 426 51605	4822 426 51761	Front Panel Assembly, Gold [/21G/22G]
	902G	4822 532 60948	4822 532 61184	Bushing, AC Cord [/21B/21G]
	001T	4822 736 21593	4822 736 22124	User Manual
	Z001	4822 218 10488	4822 218 10519	Remote Control
21	J701	4822 290 60837	4822 290 61072	Terminal, Speaker
	J702	4822 290 60836	4822 290 61071	Terminal, Speaker
	L701	4822 157 63085	4822 157 70022	Air Coil
	L702	4822 157 63085	4822 157 70022	Air Coil

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